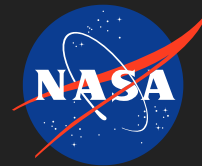


# Space-Hardened Seed Laser for Use in High Spectral Resolution Lidar Systems, Phase I

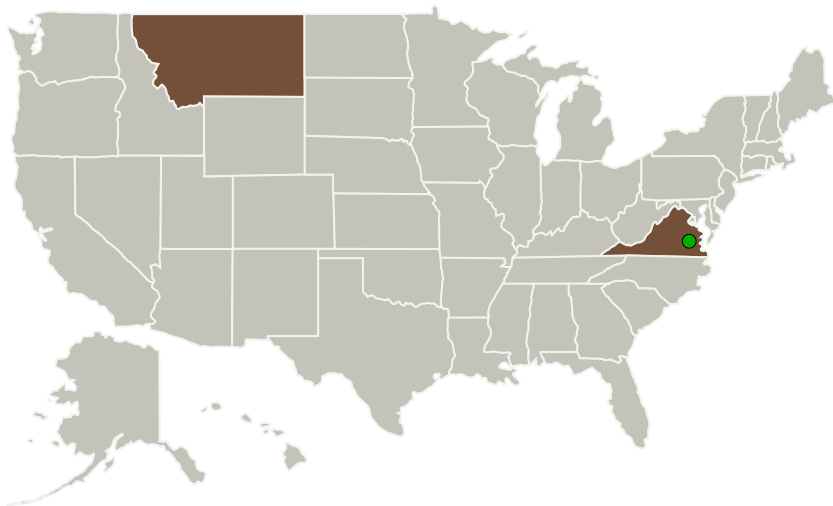
Completed Technology Project (2016 - 2016)



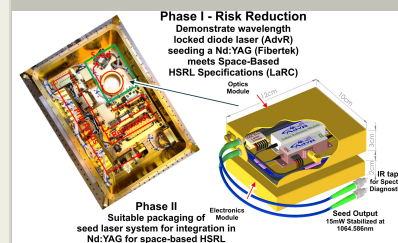
## Project Introduction

The overall goal of the SBIR effort to develop a fully packaged, environmentally hardened wavelength-locked seed laser for seeding next generation Nd:YAG lasers currently being developed for future space-based, high spectral resolution lidar (HSRL) measurements. In addition to establishing that a diode-based, wavelength-locked, seed laser can provide the spectral purity required for HSRL systems, this effort will accelerate the establishment of a US manufacturer of compact, robust, space-qualifiable diode-based seed lasers for use in future HSRL missions being developed at the NASA Langley Research Center (LaRC). A direct diode, wavelength locked seed laser will reduce the overall size weight and power (SWaP) requirements of the HSRL laser transmitter thus directly addressing the need for developing compact, efficient, lidar component technologies for use in airborne and space-based environments described in the NASA SBIR topic S1.01, Lidar Remote Sensing Technologies.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
ADVR, Inc.	Lead Organization	Industry	Bozeman, Montana
● Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



Space-hardened seed laser for use in high spectral resolution lidar systems, Phase I

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# Space-Hardened Seed Laser for Use in High Spectral Resolution Lidar Systems, Phase I

Completed Technology Project (2016 - 2016)



## Primary U.S. Work Locations

Montana

Virginia

## Project Transitions

**June 2016:** Project Start

**December 2016:** Closed out

### Closeout Documentation:

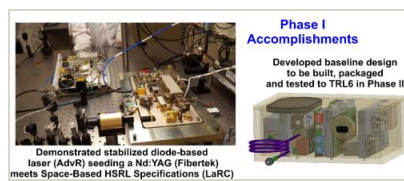
- Final Summary Chart(<https://techport.nasa.gov/file/139692>)

## Images



### Briefing Chart Image

Space-hardened seed laser for use in high spectral resolution lidar systems, Phase I  
(<https://techport.nasa.gov/image/130290>)



### Final Summary Chart Image

Space-hardened seed laser for use in high spectral resolution lidar systems, Phase I Project Image  
(<https://techport.nasa.gov/image/126573>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

ADVR, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

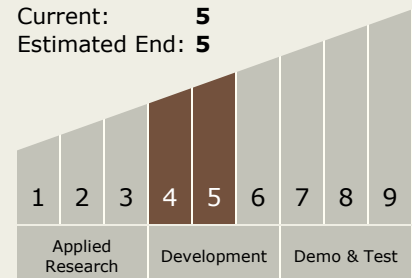
Carlos Torrez

### Principal Investigator:

Shirley Mcneil

## Technology Maturity (TRL)

Start: 4  
Current: 5  
Estimated End: 5



# Space-Hardened Seed Laser for Use in High Spectral Resolution Lidar Systems, Phase I

Completed Technology Project (2016 - 2016)



## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.3 In-Situ Instruments and Sensors
    - └ TX08.3.1 Field and Particle Detectors

## Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System